

Work Order ID 142352 -1

142352

March 07, 2016 3:52:21 PM

Page 1

Item ID: D3562-041

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Step Weldment

Start Date: 3/21/2016 Start Qty: 4.00

4

Cust Item ID:

Required Date: 4/15/2016 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals:

Process Plan:

Date:

20160322

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3562

F

100

100

Large Fab

Large Fab

Large Fab

Memo

1-Cut D2622 extrusion as per Dwg D3562
2-Deburr and bevel ends for welding

0.00

0.04

4 APR 13 2016

DAS
24
9-89

110

110

QC

Quality Control

QC6- Inspect dimensions to drawing

Memo

0.00

0.00

(4)

DAS
38
9-89
APR 14 2016

120

120

HandFinish

Hand Finishing

Chemical Conversion Coat per OSI005 4.1

Memo

0.00

0.01

4 APR 14 2016

DAS
24
9-89

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Work Order ID 142352

March 07, 2016 3:52:21 PM

142352

Page 2

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* QC Quality Control	QC7-Inspect Chemical Conversion Coat Memo	0.00 0.00				4			DAS 38 9-89 APR 14 2016
140 *140* Small Fab Small Fab	Small Fab Memo 1- Transfer drill Rivet holes as per dwg D3562. 2-Touch-up rivet holes with alodine as per dwg d3562 3-Rivet legs using Scotch-Weld as per dwg D3562. *****Ensure to wipe off any excess magnobond ***** A/R Scotch-Weld DP460 Batch: 132504 8/16 EXP DATE	0.00 0.09				4			DAS 24 9-89 APR 25 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">Skid-tube ☐</td> <td style="width:15%;">Cross tube ☐</td> <td style="width:15%;">Water Jet ☐</td> <td style="width:15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																	
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Work Order ID 142352

March 07, 2016 3:52:21 PM

142352

Page 3

Item ID: D3562-041 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Step Weldment
 Start Date: 3/21/2016 Start Qty: 4.00 ***4*** Cust Item ID:
 Required Date: 4/15/2016 Req'd Qty: 4.00 ***4*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150 *150* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00							DAS 9 9-89
160 *160* Large Fab Large Fab	Large Fab Memo 1-Weld end caps as per Dwg d3562 & QSI 004. Inspect for foreign objects as per QSI 024. A/RAluminum Rod <u>131562</u> 2-Grind end cap welds flush as per Dwg D3562	0.00 0.06							DAS 24 9-89
170 *170* QC Quality Control	QC10- Inspect visual per QSI004- ground welds Memo	0.00 0.00							

(4) 1604-27

4 APR 28 2016

(4) 16-05-09 PD

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval		
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Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : _____			

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4

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4

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Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
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Set Up/
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Tool #

Plan
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Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

180

QC5- Inspect part completeness to step on W/O

0.00

180

QC

Memo

0.00

Quality Control

④ 16-05-09 PD

190

Chemical Conversion Coat per QSI005 4.1

0.00

190

HandFinish

Memo

0.02

Hand Finishing

4 16-5-10 JH

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

200

Powdercoat

Memo

0.01

Powder Coating

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

7:00
320°
7:30

3 16-05-11 2348

DQA: _____ Date: _____

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210 *210* HandFinish Hand Finishing	Wing Walk as per dwg QSI005 4.4 Batch <u>N131497</u> Memo	0.02				3x	4	16/03/11	
220 *220* QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00				3x		16/05/11	DAS 36 9-89
230 *230* Packaging Packaging	Identify as per dwg & Stock Location: _____ Memo <u>1X w/o 142137</u> <u>16/05/11</u> DAS 36 9-89	0.00 0.00							

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Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Work Order ID 142352

142352

Page 6

Item ID: D3562-041

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Step Weldment

Stop *NS2*

Start Date: 3/21/2016 Start Qty: 4.00

4

Cust Item ID:

Required Date: 4/15/2016 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan Accept Reject Reject Insp.
Code Qty Qty Number Stamp

240

QC21- Final Inspection - Work Order Release

0.00

240

MCS

MAY 12 2016

QC

Memo

0.01

Quality Control

mf

16-5-12

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

March 07, 2016 3:52:27 PM

Page 1

Work Order ID: 142352

142352

Parent Item: D3562-041

D3562-041

Parent Item Name: Step Weldment

Start Date: 3/21/2016

Required Date: 4/15/2016

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP Rev:A New Issue 06-11-09 JLM
 IPP rev B ECN 987 07.10.09 EC verified by: DD
 IPP Rev:C ECN1048 07-12-18 DD verified by:ec
 IPP Rev:D 08-07-28 add chemical conversion coat DD verf:EC IPP REV:E
 13.06.03 PER DWG REV.F DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2622-120C *D2622-120C* Step Extrusion		Manufactured	No			100	Each	23.2360	1	4		APR 13 2016	DAS 24 9-89
Location Loc Qty Loc Code													
WA003 23.236													
130161 0.236													
134783 23													
D2734 *D2734* Step End Plate		Manufactured	No			140	Each	34.0000	2	8		APR 27 2016	DAS 24 9-89
Location Loc Qty Loc Code													
WA003 34													
134415 30													
135488 4													
D3560-041 *D3560-041* Arm Weldment		Manufactured	No			140	Each	2.0000	1	4		APR 25 2016	DAS 24 9-89
Location Loc Qty Loc Code													
WA003 2													
124288 2													

B142895 → 3

240
34
072

240
34
072

240
34
072

240
34
072

Picklist Print

March 07, 2016 3:52:27 PM

Page 2

Work Order ID: 142352

Parent Item: D3562-041

Parent Item Name: Step Weldment

142352

D3562-041

Start Date: 3/21/2016

Required Date: 4/15/2016

Start Qty: 4.00

Required Qty: 4.00

D3560-043

Manufactured No

140 Each 2.0000 1 4

D3560-043

Arm Weldment

**

APR 25 2016

DAS
24
9-89

B142823 → 2

Location

Loc Qty

Loc Code

WA003

2

133911

2

2

MS20600-AD4W5

Purchased No

160 Each 476.0000 32 128

MS20600-AD4W5

Blind Rivet

**

Location

Loc Qty

Loc Code

ST308

339

m131340

11

m132769

328

WA004

137

m131618

134

m132640

3

Too LONG ↑
DAS
24
9-89

✓ MS20600 AD4W4 → M133932 → 80% 128 APR 25 2016

DAS
24
9-89

March 07, 2016 3:52:27 PM

Shop Packet Print

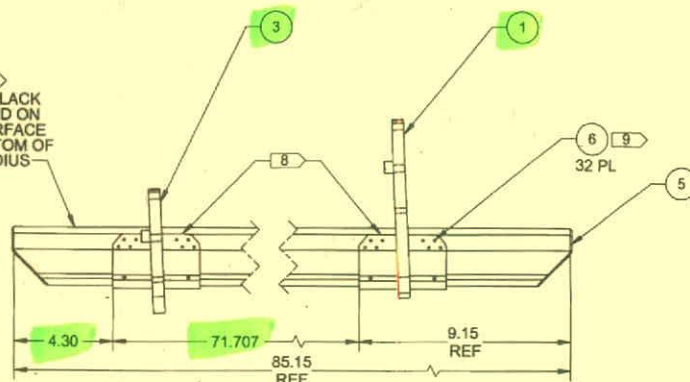
Page 2

2AC
PS
88-4

2AC
PS
88-4

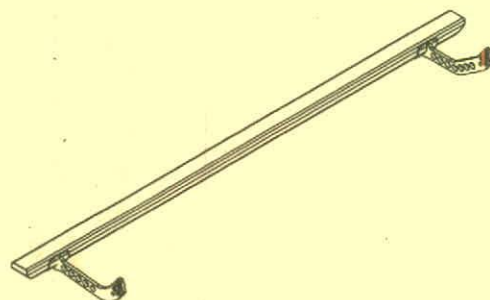
2AC
PS
88-4

2
APPLY BLACK
ANTI-SKID ON
TOP SURFACE
TO BOTTOM OF
TOP RADIUS



MEASURED BEFORE END CAPS WELDED IN PLACE

FWD



D3562-041 LH STEP ASSEMBLY

NOTES:

- 1) MATERIAL: N/A
2) FINISH:

- i) POWDER COAT ASSEMBLY GLOSS WHITE (4.3.5.1) OR
GREY SANDEXT (4.3.5.6) OR
BLACK SANDEXT (4.3.5.7) OR
GREEN SANDEXT (4.3.5.8) PER DART QSI 005 4.3

- ii) BLACK ANTI-SKID PAINT PER DART QSI 005 4.4

- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED

- 4) UNITS: INCHES UNLESS OTHERWISE NOTED

- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX

- 6) IDENTIFICATION: NONE

- 7) WEIGHT: 8.79 lbs

- 8) INSTALL ARM WELDMENTS WITH A LAYER OF SCOTCH-WELD DP460 BETWEEN
THE ARM WELDMENT AND STEP EXTRUSION. FILL ANY TOOLING HOLES WITH
SCOTCH-WELD DP460. CLEAN OFF EXCESS BEFORE POWDER COATING.

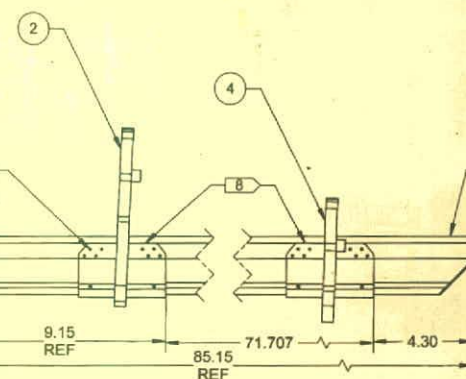
- 9) TRANSFER DRILL #30 DEBURR & TOUCH UP HOLES WITH CHEMICAL
CONVERSION COAT BEFORE RIVETING

ITEM No.	QTY -041	QTY -042	P/N	DESCRIPTION
	X		D3562-041	LH STEP ASSEMBLY
		X	D3562-042	RH STEP ASSEMBLY
1	1		D3560-041	ARM WELDMENT
2		1	D3560-042	ARM WELDMENT
3	1		D3560-043	ARM WELDMENT
4		1	D3560-044	ARM WELDMENT
5	1	1	D3562-1	STEP ASSEMBLY
6	32	32	MS20600AD4W5	RIVET

20160322

stt

142352



MEASURED BEFORE END CAPS WELDED IN PLACE

FWD

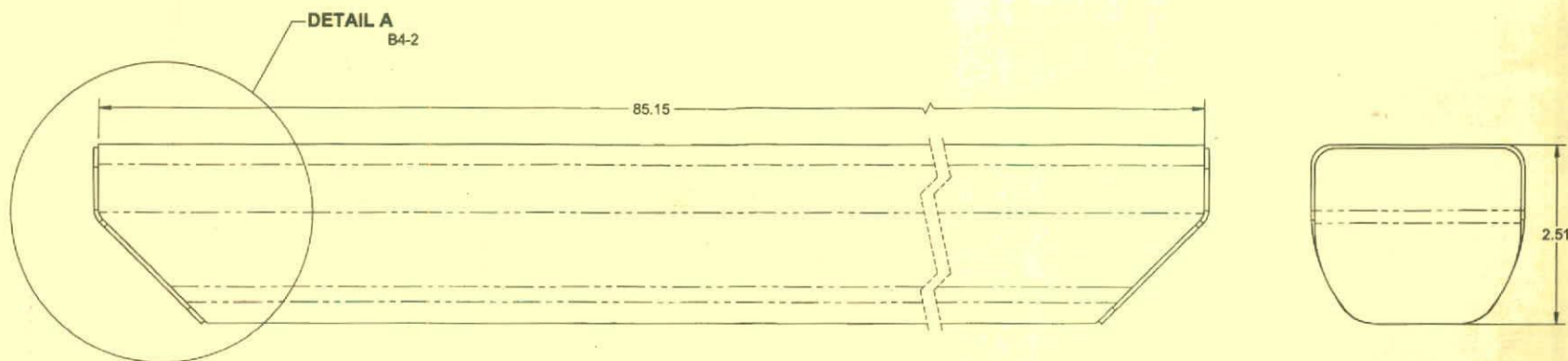


D3562-042 RH STEP ASSEMBLY

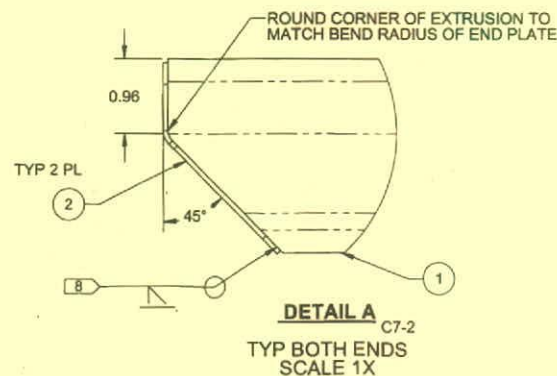
F	REVISED NOTE 8 TO REMOVE MAGNOBOND, REPLACE WITH SCOTCH-WELD DP460, REF. PAR12-224. ADDED NOTE 9 AND SHEET 2	DW	13.05.15
E	ADD QTY(2) TO D2734 END PLATE ON D3562-042	PH	08.01.11
D	REMOVE D2808 SPACER NOTE; REDRAW IN SOLIDWORKS	DC	07.11.16
C	NOW MAGNOBOND, ADD D2808, REMOVE 4 RIVETS	CP	07.06.19
B	ARMS NOW RIVETED TO STEP	CP	07.01.15
A	NEW ISSUE	CP	06.09.26
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	13.05.15		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D3562 TITLE STEP ASSEMBLY REV. F SHEET 1 OF 2 SCALE NTS THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL. IT IS NOT TO BE USED FOR ANY PURPOSE OR DISSEMINATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			



8 7 6 5 4 3 2 1



D3562-1 STEP ASSEMBLY



RELEASED
2013-06-03

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT STEP EXTRUSION PER DART QSI 005 4.1 BEFORE ASSEMBLY
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 6.68 lbs
- 8) WELDING: ALL WELDS SHALL BE 100% VISUALLY INSPECTED BY A QUALIFIED INSPECTOR PER DART QSI 004

ITEM No.	QTY	P/N	DESCRIPTION
	X	D3562-1	STEP ASSEMBLY
1	A/R	D2622-XXX	STEP EXTRUSION
2	2	D2734	END PLATE

DESIGN	qp	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DW		
CHECKED	JP	DRAWING NO. D3562	REV. F
MFG. APPR.	MA	TITLE STEP ASSEMBLY	SHEET 2 OF 2
APPROVED	JP		SCALE
DE APPR.	JP		NTS
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8 7 6 5 4 3 2 1

